Appendix J

Wasteload Allocations for Regulated Stormwater Discharges

Framework Water Quality Restoration Plan and Total Maximum Daily Loads (TMDLs) for the Lake Helena Watershed Planning Area:

Volume II – Final Report

August 31, 2006

Prepared for the Montana Department of Environmental Quality

Prepared by the U.S. Environmental Protection Agency,
Montana Operations Office
With Technical Support from Tetra Tech, Inc.
and PBS&J, Inc.

Project Manager: Ron Steg

1.0 INTRODUCTION

In accordance with internal EPA guidance provided in a November 22, 2002 memorandum (Wayland, 2002), NPDES-regulated storm water discharges must be addressed by the Wasteload Allocation (WLA) component of a TMDL. Table 1 provides a summary of the storm water discharges regulated within the Lake Helena Watershed. Locations are shown on Figure 1. A description of all of the permitted storm water discharges and associated WLAs are presented in the remainder of this appendix.

Table 1. Regulated Storm Water Discharges within the Lake Helena Watershed.

Name	Permit Number	Permit Type	Permit Expiration	Subwatershed(s)	Receiving Water Body(ies)
City of Helena	MTR0400000	General Permit - Small Municipal Separate Storm Sewer Systems	12/31/09	Tenmile Creek and Prickly Pear Creek	Tenmile Creek and Prickly Pear Creek
Montana Department of Transportation	MTR0400000	General Permit - Small Municipal Separate Storm Sewer Systems	12/31/09	Tenmile Creek and Prickly Pear Creek	Tenmile Creek and Prickly Pear Creek
Helena Regional Airport	MTR000271	General Permit - Industrial	9/30/06	Prickly Pear Creek	Prickly Pear Creek, Helena Irrigation Canal, the City of Helena sewer system, and groundwater
National Guard	MTR000428	General Permit - Industrial	9/30/06		
UPS	MTR000334	General Permit - Industrial	9/30/06		
Montana Rail Link	MTR000361	General Permit - Industrial	9/30/06	Prickly Pear Creek	Helena Valley Irrigation Ditch
Pacific Steel and Recycling	MTR000430	General Permit - Industrial	9/30/06	Prickly Pear Creek	City of Helena Storm Sewer/ Tenmile Creek
ASARCO	MTR000072	General Permit - Industrial	9/30/06	Prickly Pear Creek	Prickly Pear Creek
Ash Grove Cement Company	MTR300113	General Permit - Mining and Oil and Gas Activities	10/2007	Prickly Pear Creek	Prickly Pear Creek
Air Liquide	MTR0000006	General Permit - Industrial	9/30/06	Prickly Pear Creek	Prickly Pear Creek
Lewis and Clark County Landfill	MTR000363	General Permit - Industrial	9/30/06	Overland Flow	Helena Valley Irrigation Ditch
Miscellaneous Construction Sites		General Permit - Construction	12/31/06	Misc.	Misc.

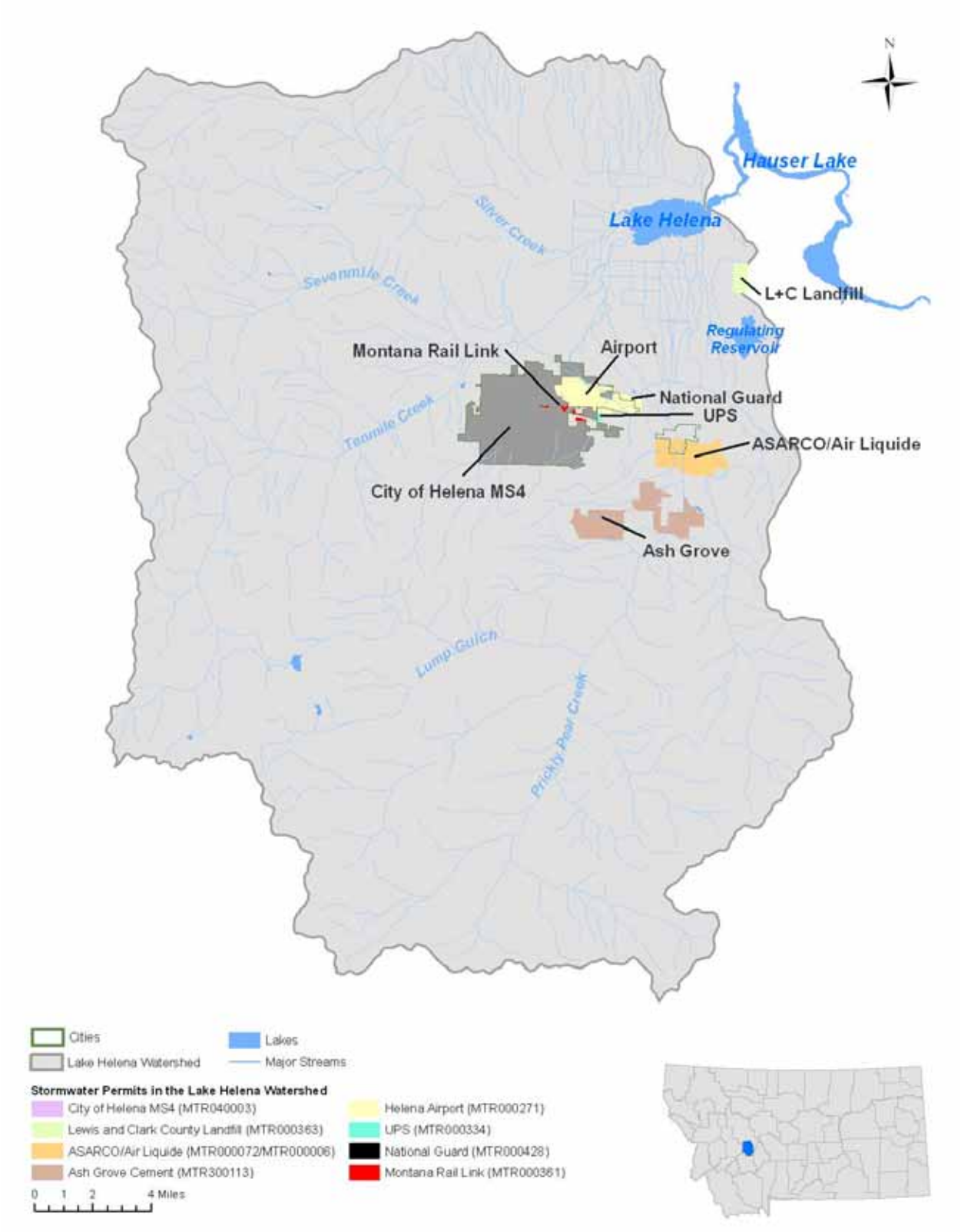

Figure 1. Facilities in the Lake Helena watershed with stormwater permits.

From a practical standpoint, "stormwater" is typically considered storm-event generated runoff from impervious surfaces. The GWLF model (Appendix C) represented stormwater primarily through the evaluation of two source categories (i.e., "urban" and "paved roads"). The relative importance of total nitrogen (TN), total phosphorus (TP), and sediment loading from stormwater is shown in Table 2. In general, stormwater TN, TP, and sediment loading represents less than 16, 13, and 3 percent, respectively, of the total loads. The regulated stormwater facilities only comprise 2.41, 4.27, and 3.40 percent, respectively, of the Tenmile, Prickly Pear, and Lake Helena Watersheds (Table 3). Assuming a linear relationship between land area and pollutant loading, it is estimated that the permitted stormwater facilities comprise only a small fraction of the total TN, TP, and sediment loading to the Tenmile, Prickly Pear, and Lake Helena Watersheds – less than half a percent (Table 4).

Table 2. Relative Importance of Stormwater Pollutant Loading (% of Total Load).

Source Category	Tenmile Watershed			Prickly Pear Watershed			Lake Helena Watershed		
	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS
Paved Roads	3.2%	2.5%	0.0%	2.5%	1.4%	0.0%	1.6%	1.2%	0.0%
Urban	12.7%	10.3%	3.0%	7.3%	3.9%	2.2%	6.2%	4.3%	NA
"Stormwater" Total	15.9%	12.8%	3.0%	9.8%	5.3%	2.2%	7.8%	5.5%	NA

Table 3. Approximate Land Area Covered by Stormwater Permitted Facilities in the Lake Helena Watershed.

Name	Permit Number	Total Area (acres)	% of Tenmile Watershed	% of Prickly Pear Watershed	% of Lake Helena Watershed
City of Helena[1]	MTR0400000	7700.0	2.41%	2.50%	1.94%
Montana Department of Transportation	MTR0400000				
Helena Regional Airport	MTR000271	1430.0	NA	0.46%	0.36%
National Guard	MTR000428	3.9	NA	0.00%	0.00%
UPS	MTR000334	22.6	NA	0.01%	0.01%
Montana Rail Link[2]	MTR000361	70.2	NA	0.02%	0.02%
Pacific Steel and Recycling[3]	MTR000430	0.64	NA	0.00%	0.00%
ASARCO/Air Liquide	MTR000072/ MTR0000006	1,584.0	NA	0.51%	0.40%
Ash Grove Cement Company	MTR300113	2387.5	NA	0.78%	0.60%
Lewis and Clark County Landfill	MTR000363	326.4	NA	N/A	0.08%
Miscellaneous Construction Sites					
Total		13,454.4[4]	2.41%	4.26%	3.40%

[1]City of Helena is 8953 acres, which partially contains the Helena Airport. The overlapping area between the City and airport was removed from the analysis so that the new City of Helena area is 7700 acres.
[2]The Montana Rail Link Facility is mostly contained within the City of Helena and corresponding stormwater permit.
[3]Pacific Steel is completely within the City of Helena and corresponding stormwater permit.
[4]Pacific Steel and Recycling and Montana Rail Link were not included in the total area so that land was not double counted.

Table 4. Relative Importance of Stormwater Pollutant Loading from Regulated Stormwater Discharges (Percent of Total Load).

Source Category	Tenmile Watershed			Prickly Pear Watershed			Lake Helena Watershed		
	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS
Stormwater Total	0.38%	0.31%	0.07%	0.42%	0.26%	0.09%	0.26%	0.19%	NA

Given the fact that regulated stormwater contributes only a small fraction of the total pollutant load, and the fact that each of the facilities listed in Table 1 are currently authorized to discharge by MTDEQ, no new requirements are proposed for regulated stormwater at this time.

However, it is recommended that monitoring and/or model-based evaluations be conducted to estimate pollutant removal efficiencies associated with all structural and non-structural BMPs at each permitted facility. Upon permit renewal, facilities should establish numeric pollutant load targets that represent the "maximum extent practicable" level of treatment. In the interim, based on literature pollutant removal efficiencies, the "maximum extent practicable" level of treatment is assumed to be 30, 50, and 80 percent removal for TN, TP, and sediment.